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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/942,039 | 08/30/2001 | Hidetoshi Nishi | 381AS/50328 | 7304 |

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EXAMINER

GOETZ, JOHN S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3725

DATE MAILED: 08/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,039

Applicant(s)

NISHI ET AL.

Examiner

John S. Goetz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it is longer than 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims 1, 3, 5, and 7 are objected to because of the below listed informalities.

Appropriate correction is required.

1. In claims 1, 3, 5, and 7, both the phrase “the desired axial positions” and “the axial positions” are used to limit the work rolls – of these, one phrase should be used consistently..
2. In claim 3, line 4, the phrase “a width” should be replaced with --the width--.
3. In claim 5, line 3, the phrase “a width” should be replaced with --the width--.
4. In claim 6, line 3, the phrase “a rolling direction” should be replaced with --the rolling direction--.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 4, 7, 9, 11, 12, 14-16, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The method claims 1, 9, and 14-16, use the phrase “when [a or the] material with constant width is being rolled.” This phrase is awkward because it implies that there is another

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embodiment of the invention where the material width is variable. This limitation should be placed in the preamble and read --A method for rolling a material of constant width in a rolling mill--.

Claims 3 and 4 recite the limitation "start points." There is insufficient antecedent basis for this limitation in these claims.

Claim 11 recites the phrase "at least one of" and then recites a series of limitations beginning with the word "means." Because it is not clear if "at least one of" refers to the type of intermediate axial roll or to the series of "means" limitations, this claim is indefinite. In addition, the claim is improperly alternative and confusingly uses the word "and" in line 11. Further, the claim appears to be an improper Markush claim, at best.

Claims 14-16 recite the limitation "the material." There is insufficient antecedent basis for this limitation in each of these claims.

Claims 18 and 19 recite the limitation "work rolls." There is insufficient antecedent basis for this limitation in each of these claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8-11, and 13-20, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Hiruta et al.

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Regarding claims 1, 9-11, and 14-20, Hiruta et al. disclose several embodiments of a six-high rolling mill (see Figs. 37, 41, 45) including, inter alia:

1. tapered work rolls (2);
2. intermediate rolls (3); which are axially movable via drive mechanism (6);
3. control means (21, 22) for controlling the intermediate rolls axial movement, and;
4. measuring devices (24, 25) for detecting shape, crowning and edge drop.

Additionally, inherent in several different parts of the Hiruta et al. patent is a "setting" of the axial positions of the work rolls (2) via a "setting mechanism" comprising shifting units (5). For example, in columns 19 line 39 through column 20, line 10, Hiruta et al. disclose a method of rolling where the work rolls (2) are adjusted before rolling (see "to be rolled" language line 48) and only the intermediate rolls are shifted during the rolling action (see column 20, lines 9-10).

Regarding claim 2, Hiruta et al. further disclose that the roll stand is designed to control the edge thickness or edge drop (see column 2, lines 34-36).

Regarding claim 3, Hiruta et al. disclose that the start points of the tapered edges come within the width of the strip (see e.g. Fig. 31A, Fig. 35 or Fig. 39).

Regarding claim 4, Hiruta et al. disclose arced tapered portions of the work rolls (see 2, Fig. 3A).

Regarding claims 8 and 13, Hiruta et al. disclose a method of controlling the intermediate rolls based on the difference between actual and target "sheet shape" and "sheet crown" (see column 7, lines 9-18). Furthermore, Hiruta et al. disclose that inherent in controlling sheet crown is controlling edge drop and that sheet crown is defined as the distribution of thickness in the width direction (see column 1, lines 14-19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiruta et al. in view of Kajiwara (4,369,646). Claim 5 adds that the axial positions of the work rolls are adjusted according to a change in width of the rolled material. Kajiwara teaches that such an adjustment helps to provide “shape stability” and a reduction in edge drop (see column 1, lines 31-39). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the axial positions of the work rolls according to the rolled material width in order to further improve shape stability and reduce edge drop, as suggested by Kajiwara.

Claims 6 and 21, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiruta et al. in view of Kajiwara et al. (6,286,945 B1). Claim 6 adds to the rolling method of claim 1 that the rolling mill is reversible. Kajiwara et al. disclose, that a reversible mill set-up costs less than a tandem mill set-up (see column 15, lines 62-64). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the rolling mill of Hiruta et al. reversible in order to save money. Claim 21, as best understood is rejected for the same considerations as applied to claim 6.

Claims 7 and 12, as best understood at this time, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiruta et al. Both these claims add the “setting” of the axial positions of

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the work rolls so that the average of the actual edge drop value and the target edge drop value “almost agree.” Hiruta et al. do not disclose the use of an average of the actual edge drop. However, they do disclose a method of rolling where the work rolls are set “so that the edge drop can be controlled in accordance with a predetermined target amount of edge drop” (see column 19, lines 52-54). In light of this disclosure, it would have been an obvious matter of design choice to use the “average of the actual edge drop” value, since the applicant has not disclosed that using this average solves any stated problem or is for any particular purpose.

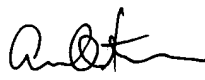
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Goetz whose telephone number is 703-308-1411. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Allen Ostrager can be reached on 703-308-3136. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3579 for regular communications and 703-305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-3136.

JSG
August 13, 2002


ALLEN OSTRAGER
SUPERVISORY PATENT EXAMINER
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